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Agricultural

Education

Rationalization

Project

CANADIANA

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A Joint Project of

FAIRVIEW COLLEGE

LAKELAND COLLEGE

LETHBRIDGE COMMUNITY COLLEGE

OLDS COLLEGE

*ALBERTA ADVANCED EDUCATION
AND CAREER DEVELOPMENT*

Initial Report

July 1995



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A. PROJECT PURPOSE

The Agricultural Education Program Rationalization Project is a joint initiative involving Alberta Advanced Education and Career Development and the four colleges in the province that offer agricultural education programs (for the purposes of this report, called Fairview, Lakeland, Lethbridge and Olds). The project was initiated in early 1994 in response to changes in the agricultural industry and the post-secondary education environment. The overall purpose of this project was to determine if the provincial resources currently allocated to college-level agricultural education might be better aligned to ensure their effective and efficient use.

This project reflects several themes in the policy document entitled **New Directions for Adult Learning in Alberta**, which was published by Alberta Advanced Education and Career Development in October, 1994, describes several goals and strategies for post-secondary education in this province in the coming years. Two goals of particular import to this present study are:

- (a) Accessibility - the system will increase access for motivated Albertans to a diverse range of quality learning opportunities, and
- (b) Responsiveness - the System will increase its responsiveness to the needs of the individual learner and to the social, economic and cultural needs of the province.

Among the strategies contained in the document are the following:

- (a) 2.3 Establish consultation activities to ensure the adult learning system is responsive to the needs of Albertans.
- (b) 2.6 Improve the transfer of courses and the recognition of prior learning to assist the progress of Albertans in the adult learning system.
- (c) 2.7 Remove barriers to responsiveness in programming to more effectively meet the needs of learners.
- (d) 3.5 Develop centres of program specialization in public post-secondary institutions to ensure quality, cost-effectiveness and efficiency.

With this backdrop, the four colleges and Advanced Education and Career Development agreed to undertake a project, with the specific objective being to develop and implement an inter-institutional plan for the rationalization of agricultural programs to ensure efficient use of public resources, alignment with industry and employer needs and ultimately a clearly focused response to the expectations of students for effective training leading to employment.

B. • PROJECT PROCESS

A Steering Committee was formed in early 1994, comprised of Donna Allan (Lethbridge Community College), Bob Bigsby (Olds College), Neil Henry (Alberta Advanced Education and Career Development), Doug Schmit (Lakeland College) and Fred Trotter (Fairview College). The purpose of this committee was to develop a plan for the rationalization of college-level agricultural education in Alberta.

The Steering Committee engaged two consultants to perform a variety of tasks:

- (a) gather information about the organization, structure and training needs of related industries
- (b) learn about alternative programs and industry needs from other government departments
- (c) review the relevant literature, including previous studies of agricultural education in Alberta, and
- (d) formulate program rationalization and related recommendations for consideration by the Steering Committee.

Concurrently, the Senior Business Officers of the four colleges, in conjunction with a consultant from government, developed a costing model in order to ascertain program-related financial data that would be available for this project.

Additionally, the Senior Academic Officers compiled program, enrolment and farm operation data. Individual College Presidents also became involved in formulating several program specific recommendations.

In guiding this process, the Steering Committee reviewed periodic reports from both the consultants and the Senior Business Officers and Academic Officers, and by March, 1995, had sufficient information to begin preparing this plan. The details of the plan, which follow in the sections below, describe specific actions to be taken in three areas:

- (a) activities related to eleven agricultural education programs
- (b) consultation at the provincial level, and
- (c) matters which cross all program areas and are basic to the effectiveness of a provincial, inter-institutional approach to agricultural education in Alberta.

This is the Steering Committee's initial report. It has been endorsed by all members of the Steering Committee, who have committed to sharing it with their respective organizations and publics. The report details the actions the Steering Committee has agreed to take toward rationalization of agricultural education.

C. PROGRAM RATIONALIZATION PLANS

I. Program Specific

The purpose of this section is to briefly describe the existing context related to the eleven program areas and to delineate the actions which the Steering Committee have agreed to implement. Summaries of existing program, financial, enrolment, and employment information are presented in each sub-section; the reader is invited to examine appendices for greater detail related to institutional programs, enrolment and costs, and to various sectors of the industry.

a. Agribusiness

1. Existing Situation

i) *Program Perspective*

This program area encompasses courses on such topics as finance, accounting, personnel and management, with an agricultural emphasis.

Diploma programs in this area are offered at Lakeland and Olds Colleges. Majors are offered at Fairview and Lethbridge Colleges through their Agriculture Technology Programs.

These programs are organized and named in significantly different ways at each college, and tend to be somewhat separate from "regular/credit" agribusiness programs (perhaps based on the difference in target clients).

ii) *Financial Perspective*

According to the cost data provided by the Senior Business Officers, the unit costs for this program area averaged \$10,575/FTE in 1993/94.

iii) *Enrolment Perspective*

The Colleges reported a headcount of 117 student in this program area for 1993/94, with 53 graduates in 1994.

iv) *Employment Perspective*

There appears to be an ongoing need for people with both financial skills and a knowledge of agriculture. However, as the financial complexity of agribusiness grows, the need for agricultural knowledge may diminish.

2. Action Plans

- i) The colleges will jointly identify and work with a representative group of agribusiness employers to ascertain appropriate content, quotas and delivery formats for this program as well as competencies and a rationalized curriculum.
- ii) The Farm Business Management Certificate Program is somewhat separate from the Agribusiness programs but the two will be articulated at all colleges so as to facilitate the transfer of credits.

b. Agricultural Mechanics

1. Existing Situation

- i) *Program Perspective*

This program area encompasses courses on such topics as machine maintenance and repair including turfgrass equipment.

Programs in this area are offered at Olds and Lakeland Colleges with Fairview offering a program in Turfgrass Equipment Maintenance. Fairview also offers a specialty as part of the Agricultural Technology program, and Lethbridge offers an Agricultural/Heavy Duty Mechanic one-year certificate program, following which students may transfer into Lethbridge Community College's Agricultural Technology or Automotive Service Technology diploma programs or to Year II of the Mechanical Technology diploma program at Olds.

In addition to an Agricultural Mechanics pre-apprenticeship major and an Agricultural Mechanics Equipment major, Olds College offers a Production Management second diploma in the Agricultural Production program.

- ii) *Financial Perspective*

According to the cost data provided by the Senior Business Officers, the unit costs for this program area averaged \$10,966/FTE in 1993/94.

- iii) *Enrolment Perspective*

The Colleges reported a headcount of 178 students in this program area for 1993/94, with 72 graduates in 1994.

iv) *Employment Perspective*

There is no clearly defined Agricultural Mechanics industrial sector because farm operations and businesses (e.g. farm machinery dealerships) may be involved with products or services in addition to those related to agricultural mechanics.

As with all sectors which relate to the application of technology, this sector requires people who possess current knowledge and skills, and particularly have "hands-on" ability, in order to manufacture, assemble, and repair agricultural machinery and equipment. As the use of technology continues to grow in agriculture, new specialties and increased employment opportunities are likely to emerge.

2. Action Plans

- i) The colleges will work towards consistent nomenclature and certification in this program area.
- ii) The program will continue to be offered at all four colleges, subject to consultation through a Provincial Advisory Committee.

c. Agricultural Technology/Production

1. Existing Situation

i) *Program Perspective*

This program area encompasses courses on such general topics as crops and livestock production and management, and farm and ranch operations.

It is intended to provide students with practical skills in such areas as genetics, nutrition, crop production, soils and business management.

Each college offers programs in the Agricultural Technology area, addressing various aspects of farm operations. The programs have a variety of names and encompass several specialties. (e.g. Fairview College offers specialties in Agribusiness and Agricultural Mechanics.)

It is difficult to align the programs and majors with sectors of the agricultural industry; however, the programs/majors represent skills training relevant to specific agricultural sectors.

These programs are the most closely aligned to college farm operations with the exception of Lethbridge Community College, which does not have a farm operation.

ii) *Financial Perspective*

According to the cost data provided by the Senior Business Officers, the unit costs for this program area averaged \$12,479/FTE in 1993/94.

iii) *Enrolment Perspective*

The Colleges reported a headcount of 309 students in the program area for 1993/94, with 97 graduates in 1994.

iv) *Employment Perspective*

Various sectors acknowledge the desirability of a well-trained workforce, but the needs of the industry involved in primary production are often at a lower level of training than is provided by the colleges. Highly specialized operations tend to provide suitable job openings for college graduates, while more diversified operations offer low level, seasonal work.

Annual demand for employees in the beef industry tends to be very seasonal with more people required in spring calving, June roundup and processing and fall weaning periods; feedlot operations tend to offer year-round employment opportunities.

Up to 30,000 sheep leave the province annually to B.C. to keep down "weeds" so forest seedlings can grow. Opportunities for more grazing contracting will emerge in the sheep industry.

There will be overall growth in the swine industry in the next 5 - 10 years resulting from greater investment from both domestic and foreign sources; this will lead to increased needs for trained people. The export market is growing, as the production capabilities of other countries (e.g., Japan) are maximized.

The number of dairy farms in Alberta has been declining over the past 20 years (from a reported 1,933 to 1,358 in 1993). Production has remained fairly steady over the past decade, indicating that while the number of farms has decreased, the overall ("provincial") herd size has been somewhat constant. The number of owners has been decreasing and the number of employees has increased. The North American dairy marketplace will change significantly over the next 5 - 10 years, as operations become larger, but fewer in number, and require more trained employees.

Global, national and provincial forces, including reduction and elimination of agricultural support, have recently emerged. These are creating a need for diversification of crops and agricultural products while influencing individual operating units to become more specialized in their production and marketing. This production shift requires individuals with a higher degree of ability in crop management, resource protection, business, financial and human resources management. This is relevant to both primary producers and the industries and businesses that support agricultural production.

The majority of graduates of the agricultural technology programs return to manage what is essentially the family farm. In the future, these individuals must be able to explore the potential of more diverse crops and specialize in specific crops/products. They require a high degree of proficiency in agricultural production and marketing.

2. Action Plans

- i) The institutional diplomas in agricultural production and agricultural technology will be named by each of the colleges appropriate to program focus; i.e. Agricultural Production or Agricultural Technology. It is intended that a single diploma name will be developed over time.
- ii) A common core of competencies will be in place by September 1, 1996 which ensures articulation of year one of the Agricultural Production/Agricultural Technology programs. Further, it is recognized that each of the institutions will have scope to offer specializations in year two specific to regional needs, in collaboration with the lead-role college. The colleges will undertake a study to determine the degree of commonality between crop and livestock production specialties to enhance transferability and recognition of prior learning.
- iii) Agricultural specialties will be located as follows:

Swine - Olds College	}	Advisory Committees will assist in
Sheep - Olds College	}	determining student numbers, program
Dairy - Lakeland College	}	content, organization and operations.
		i.e. possible year-round operation is required

Beef - all colleges will be involved, relying on a provincial advisory committee to assist in determining program content, specializations required, transferability and student numbers to be served.

Crops - All colleges will be involved, relying on a provincial advisory committee to assist in determining program content, specializations required, transferability and student numbers to be served.

d. Animal Health Technology

1. Existing Situation

i) Program Perspective

This program area encompasses courses on such topics as animal health service, animal management and diagnostic laboratory procedures, and is intended to enable students to develop such competencies as required for the handling and the care of sick animals in the hospital and providing assistance in surgery.

Programs in this area are offered at Fairview, Lakeland and Olds Colleges and also at NAIT.

ii) Financial Perspective

According to the cost data provided by the Senior Business Officers, the unit costs for this program are averaged \$14,004/FTE in 1993/94.

iii) Enrolment Perspective

The Colleges reported a headcount of 127 students in this program area for 1993/94, with 53 graduates in 1994.

iv) Employment Perspective

Industry representatives indicated that there appears to be a balance between supply and demand for Animal Health Technologists at this time. As veterinarians increase their hiring and use of Animal Health Technologists, the number of graduates required to fill provincial needs will increase.

2. Action Plans

i) In conjunction with NAIT, there will be a review of the size and locations of the current programs.

ii) A provincial advisory committee will be established and will include representatives from program accreditation agencies.

- iii) All institutions offering this program will improve program articulation and transferability.

e. Beekeeping

1. Existing Situation

i) *Program Perspective*

This program encompasses courses on the commercial operation and maintenance of bee colonies.

Programs in this area are offered at Fairview College only.

ii) *Financial Perspective*

According to the cost data provided by the Senior Business Officers, the unit costs for this program area averaged \$21,079/FTE in 1993/94.

iii) *Enrolment Perspective*

The Colleges reported a headcount of 8 students in this program area for 1993/94, with 8 graduates in 1994.

iv) *Employment Perspective*

About 60% of the beekeepers are in Northwest Alberta, so the program appears to be appropriately situated.

Program content and delivery appear to be appropriate to the training of both technicians and potential operators.

The provincial need for trained technicians appears to be met through this program.

2. Action Plans

- i) Fairview College will have the lead responsibility for this program area.
- ii) A Provincial Advisory Committee will be created to advise on such program matters as quotas and curriculum.
- iii) Fairview College will reduce unit costs in this program.

f. **Equine Studies**

1. **Existing Situation**

i) *Program Perspective*

This program area encompasses courses on such topics as breeding, production, riding, training, anatomy, nutrition and horse psychology and is intended to enable students to develop such competencies as necessary to become successfully employed in the horse industry.

Programs in this area are offered at Fairview, Lakeland and Olds Colleges.

These programs are organized and named differently at each college and appear to focus on local and regional interests. Despite these variances, an analysis of the college calendars suggests there is much commonality among the three programs.

College follow-up studies indicate that one-half of graduates obtain employment in the industry.

The programs do not appear to rely on college farm operations for their viability.

Two of the colleges use the Canadian Equine Federation coaching programs in their riding courses.

ii) *Financial Perspective*

According to the cost data provided by the Senior Business Officers, the unit costs for this program area averaged \$21,475/FTE in 1993/94.

iii) *Enrolment Perspective*

The Colleges reported a headcount of 89 students in this program area for 1993/94, with 34 graduates in 1994.

iv) *Employment Perspective*

Industry representatives indicated that there appears to be a need for a two-year diploma program that addresses the needs of each of the major industry sectors ("Agriculture" and "Sport/Recreational"; see large table enclosed inside the back cover of this report).

Since a high proportion of students take these programs for avocational reasons, there is an under-supply of graduates from the existing programs for employment in the equine industry.

There is a desire for more “hands on”, cooperative education approaches.

It is anticipated that there will be a steady growth in the demand for trained employees in the Sport/Recreational sector of the horse industry.

2. Action Plans

- i) Equine-related diploma programs will be designed to meet the specific needs of the sectors of the Equine industry that are being targeted.
- ii) The colleges with Equine-related diploma programs will work with the Alberta Equine Industry Development Council to form a provincial advisory committee to ensure that program reviews and curricular offerings conform to the evolving needs of targeted sectors of the industry, and to assist in forecasting enrolment quotas.
- iii) The colleges with Equine programs will meet avocational interests by delivering non-credit Equine-related training on the basis of full recovery of direct costs.
- iv) All colleges' Equine curricula will evolve as industry evolves and, where common curricular needs are identified, the colleges will cooperate in the development of curriculum and transferability of students based on a set of common competencies to be developed during their first year of studies.
- v) All colleges shall reduce significantly the unit costs of the Equine program.
- vi) Fairview College will articulate its equine program activities with those of Olds and Lakeland Colleges.

g. Farrier

1. Existing Situation

- i) *Program Perspective*
This program area encompasses courses on such topics as blacksmithing, horseshoeing and welding.

Programs in this area are offered at Fairview and Olds Colleges.

While these programs are organized to prepare people for the same industry, they use somewhat different instructional approaches.

ii) *Financial Perspective*

According to the cost data provided by the Senior Business Officers, the unit cost for this program area averaged \$18,524/FTE in 1993/94.

iii) *Enrolment Perspective*

The Colleges reported a headcount of 25 students in this program area for 1993/94, with 19 graduates in 1994.

iv) *Employment Perspective*

Industry representatives indicated that virtually all full-time farriers are self-employed. There are about 100 full-time farriers in Alberta and several hundred (perhaps as many as 900) part-time farriers.

The annual turnover rate is about 20% largely due to injuries on the job and aging, and it is projected that this turnover rate will increase in the future.

The industry has indicated a growing need for communications, computer based business applications and entrepreneurial training in the program.

2. **Action Plans**

- i) Olds College will be the lead institution responsible for designing the program based on consultation through a Provincial Advisory Committee.
- ii) The Fairview College program will articulate with the Olds College program.
- iii) The colleges will reduce the unit costs of the Farrier program.

h. **Horticulture**

1. **Existing Situation**

i) *Program Perspective*

This program area encompasses courses on such topics as greenhouse production and greenhouse management, and is intended to enable students to develop such competencies as operating commercial enterprises in the Horticulture sector.

Programs in this area are offered at Olds College only.

Industry representatives indicated that they had a number of concerns with the operation of the program. e.g. responsiveness to changes within the industry and the process of Industry consultation.

ii) *Financial Perspective*

According to the cost data provided by the Senior Business Officers, the unit costs for this program area averaged \$11,682/FTE in 1993/94.

iii) *Enrolment Perspective*

The Colleges reported a headcount of 69 students in this program area (i.e. exclusive of turf management) in 1993/94, with 24 graduates in 1994.

iv) *Employment Perspective*

Shortages of trained people vary across the sectors. Overall, however, there appears to be a balance between supply and demand

Many of the jobs in the "traditional" sectors (e.g., greenhouse operations) are seasonal and may even conflict with the timing of program operations.

Jobs in emerging sectors (e.g., garden centres) tend to be year-round.

There is a growing need for graduates to possess management-related skills.

2. Action Plans

- i) Olds College will assume the lead responsibility in this program area and will pursue the resolution of Industry association concerns through a Provincial Advisory Committee, and in consultation with the other colleges.

i. Irrigation Technology

1. Existing Situation

i) *Program Perspective*

This program area is designed to give individuals specialized training to prepare them for various careers in the irrigation and drainage industry. The focus is on specific conditions and requirements that affect irrigated agriculture and the turf and landscape industry in

Western Canada. The program provides a coordinated approach to training in order to gain an understanding of technological irrigation system design, economic and soil and water resource management and economic issues.

Turf irrigation courses are presently taught at Olds and Fairview Colleges as part of their existing horticultural and turfgrass programs.

ii) *Financial Perspective*

This program is offered only at Lethbridge Community College. It was under temporary suspension at the time of this project, hence no financial or enrolment data are available.

iii) *Enrolment Perspective*

See (ii) above.

iv) *Employment Perspective*

Approximately 90% of irrigation occurs from Strathmore south.

'Partnerships' between the industry and the college exist to ensure that the college is aware of changes in the industry.

The irrigation industry is readily definable and companies could be easily identified to sit on any form of advisory group.

The program must have built in flexibility to upgrade and retain existing employees and able to accommodate expansion when determined by the industry.

2. **Action Plans**

- i) Lethbridge Community College will be designated as the institution responsible for designing and coordinating the delivery of all required technology training for the irrigation industry, in consultation with the industry and the other colleges through a Provincial Advisory Committee.
- ii) The curriculum of the Irrigation Technology program will be reviewed to determine the extent to which it can be articulated with that of the Agricultural Technology/Production program.

j. **Seed and Grain**

1. **Existing Situation**

i) *Program Perspective*

This program is intended to provide training in specialized seed and grain technology.

The program strives to produce graduates with a high level of theoretical knowledge, technical competencies, human relation skills, and communication/problem solving abilities. The overall objective is to enable graduates to pursue careers in either the seed or grain handling sectors of the industry.

This program is offered at Olds College only.

ii) *Financial Perspective*

According to the cost data provided by the Senior Business Officers, the unit costs for this program area averaged \$13,952/FTE in 1993/94.

iii) *Enrolment Perspective*

The College reported a headcount of 18 students in this program area for 1993/94, with 1 graduate in the spring of 1993 (program is offered every second year).

iv) *Employment Perspective*

Industry representatives indicated that continuing education opportunities must be made available to employees in this sector to upgrade their skills and enable them to remain employable in a changing industry.

2. **Action Plans**

- i) Olds College will be designated as having the responsibility for designing and coordinating the delivery of all required industry training for the seed and grain industry, in consultation with the industry and the other colleges.
- ii) The possibility of the Seed and Grain program becoming an option or major in the Agricultural Technology/Production program will be reviewed with industry and other colleges through a Provincial Advisory Committee.

k. **Turfgrass**

1. **Existing Situation**

i) *Program Perspective*

This program area encompasses courses on such topics as turfgrass production and golf course maintenance and management.

Programs in this area are offered at Fairview and Olds Colleges

The turfgrass-related programs at Fairview College and Olds Colleges are distinctive in that the program at Fairview College is oriented primarily toward preparing individuals for employment as managers and supervisors of golf courses, parks, and similar installations and the program at Olds College is a major within a horticultural program oriented primarily toward preparing individuals for employment as turfgrass and related cultivar management specialists for golf courses, athletic fields and recreational facilities.

ii) *Financial Perspective*

According to the cost data provided by the Senior Business Officers, the unit costs for this program area (Turfgrass Maintenance and Turfgrass Management) averaged \$7,856/FTE in 1993/94 (at Fairview College only).

iii) *Enrolment Perspective*

The Colleges reported a headcount of 185 students in this program area for 1993/94, with 76 graduates in 1994.

iv) *Employment Perspective*

Available positions at existing golf courses are at a lower level of skill than possessed by graduates of the diploma programs, and these positions are most often of a seasonal nature.

There is an apparent over-supply of graduates already in the field accepting lower level positions, and some obtain related employment in neighboring provinces.

Owner/operators of the public small 9-hole courses will require in-service training in such areas as pesticides and fertilizers.

2. **Action Plans**

i) Both Olds and Fairview Colleges will continue to offer distinctive

diploma program in this sector. Olds College will continue to offer the Turf Management major in their Horticulture program. Fairview College will continue to offer the Golf Course major in their Turfgrass Management Program.

- ii) A provincial advisory committee will be formed to advise the two institutions on such matters as:
 - capacity of the industry to absorb graduates, and
 - desired competencies of graduates
- iii) A significant degree of commonalty in first-year studies will be developed and both colleges will ensure transferability between the two institutions.
- iv) Fairview College will continue to offer a certificate program in Turfgrass Equipment.

II. General Topics

a. Industry - Related Matters

The sole topic of this sub-section relates to the nature of the relationship(s) between the colleges and the industry, from a provincial perspective, and the resulting impact on program design, development, and operation.

1. Relationships with Industry

i) Existing Situation

There are strong relationships between the colleges and individual employers at the local and regional levels. In one or two program areas, there are also good working relationships at a provincial level.

In most program areas there appear to be weak relationships between the objectives and content of programs and the requirements of the related provincial sector as described by provincial associations.

Industry representatives indicate that the colleges offering agricultural education programs which prepare people for entry to (or continuing employment in) a particular sector of the agricultural industry should ensure that:

- the needed competencies are identified and developed in collaboration with industry;
- the needed competencies are regularly validated by the industry; and
- the numbers of people trained are in accordance with industry needs.

Many reports have been completed by Alberta industry and governmental groups in recent years, with these containing recommendations directly relevant to agricultural education at the college level. It appears that little or no action has been taken by the colleges as a result of such studies, in part because the reports have made inconsistent recommendations or because they have not been directed to the appropriate authority.

ii) *Action Plan*

1. The agriculture college Presidents will create a Provincial Advisory Committee comprised of representatives from the industry, along with representation from relevant government departments (Alberta Advanced Education and Career Development and Alberta Agriculture, Food and Rural Development) and the College Presidents. The purpose of this committee will be to provide a provincial perspective on college level agricultural education in this province.
2. The agriculture colleges with lead role responsibilities will create sector specific Advisory Committees. The purpose of these committees will be to assist in province-wide coordination of college programs, at the industry sector level (e.g., one sector committee for swine, another for equine, and so on). These committees will examine and provide advice (perhaps through sub-committees) on such topics as curriculum development, instructional resources (including industry participation), employment demand, and follow-up studies. Membership will be comprised of relevant industry sector representatives (provincial associations and major employers), all colleges, and government departments as appropriate.

b. **General Program-Related Matters**

The topics in this sub-section relate to key concerns or suggestions expressed by industry representatives/organizations.

1. **Entrepreneurial Training**

i) *Existing Situation*

There is an emerging need for graduates of the agricultural education programs to be equipped with the skills to be (or become) self-employed as well as to take on broader roles as employees.

Of particular import are skills and knowledge in the areas of financial management, accounting and computer applications.

ii) *Action Plan*

Colleges will evaluate all of their agricultural programs to ensure that those competencies necessary to successful conduct of business are developed in the student.

2. Available Alternatives

i) *Existing Situation*

There is a wide variety of training activity within industry itself. Some of this could be a most viable alternative to, or even adjunct to publicly-funded college-based courses and/or programs (for example, the coaching programs offered by the Alberta and Canadian Equestrian Federations, and a variety of conferences and short courses tailored to the specific needs of particular sectors of the industry). An essential difference between these examples and college-based programs is that they are user-pay; no public funds are provided.

ii) *Action Plan*

The colleges will work with industry to compile an inventory of courses offered and needed by industry, with a view to ascertaining which of these could be incorporated into, or recognized by, college programs so as to reduce duplication and better serve the needs of people working in each sector.

3. Cooperative Education

i) *Existing Situation*

Many industry representatives stressed the desirability of employing graduates who possess the skills necessary for productive employment, and this often was accompanied by a comment about the value of "hands-on" instruction.

Industry representatives acknowledged that many programs currently do have a practical side to the curriculum, but still indicated that some form of cooperative education would be useful.

ii) *Action Plan*

The colleges will work with industry to identify programs that might be transformed into a cooperative education format. In addition, colleges will work with industry to identify strategies to increase the practicality of

content and work with placement opportunities.

4. **Ascertaining the Performance of Graduates**

i) *Existing Situation*

It is difficult to ascertain the overall extent to which industry needs for trained manpower are being met through college programs, in part because neither the industry nor the colleges has accurate data on:

- the numbers of new entrants and their qualifications, and
- the movement of graduates after they have left the colleges.

The colleges do conduct follow-up studies of graduates, but these tend to be conducted some time after graduation, and lead to conclusions based only on those graduates who respond; there is no consistent, continuing approach to follow-up studies.

As for the industry, the various sectors are at different stages of self-knowledge. The horticulture sector, for example; has recently conducted two major studies of activity, and is in a very good position to analyze its needs for manpower and other aspects. Other sectors have little data about themselves.

The consultants were told often that many graduates "returned to the family farm", yet there is little information about the educational and career patterns of such students.

ii) *Action Plan*

1. The colleges will work with industry to design and implement a system for:
 - determining the needs of each sector for people trained at the colleges
 - counting enrolments and graduates
 - tracking the performance of those graduates who enter the industry so as to assure the ongoing currency of college programs, and
 - determining the specific in-service or staff development needs of the sector.
2. The colleges will work with industry to find a way to incorporate knowledge and understanding of the "family farm" into the activity recommended above, so as to ensure that the needs of these enterprises for trained people are met.

3. The colleges will articulate the above activities with their development of Key Performance Indicators.

Note: Fifteen Key Performance Indicators have been developed in consultation with the post-secondary institutions. These will provide data on enrolment and instructional loads, program completion, university transfer program leavers, transferability of courses, cost per student and cost per student contact hour, cost per graduate, employment of graduates, academic intentions of graduates, satisfaction of graduates, program demand and capacity, faculty teaching loads, space utilization, revenues, operating grants and tuition fees per student, and institutional expenditures. These data will help institutions to gauge the effectiveness of their programs and, coupled with input from employers of graduates and industries that provide career and professional opportunities, make programming and policy decisions. Some indicators will count in the new institutional funding formula being designed to improve the use of public resources devoted to the adult learner. Given colleges' general commitment to reduce unit costs in agricultural education, the need and performance of graduates will be key factors in the development and implementation of rationalization plans.

5. **Expectations of Graduates**

i) *Existing Situation*

Many industry representatives indicated that graduates of college agricultural programs often hold much higher (and often differing) expectations of employers than what employers are able to deliver, especially in the areas of salaries, working conditions and career paths.

Industry representatives also commented about graduates lacking a "work ethic".

ii) *Action Plan*

The colleges will address such concerns with employers to determine the extent of these concerns and what must be done, including curricular and experiential changes, to ensure that students are realistically aware of employer expectations.

6. Advisory Committees

i) *Existing Situation*

Many industry representatives commented negatively about the lack of opportunity for them to have meaningful input into college program matters, citing such things as absence of structure, poorly defined responsibilities and infrequent activity of advisory committees (for example, some industry representatives said that the colleges "do not hear" what industry says, that instructors give the impression that they are aloof, that the colleges purport to "know what we need").

ii) *Action Plan*

The sector-specific Advisory Committees that are to be established will address these matters.

7. Articulation With Other Agencies

i) *Existing Situation*

There is a variety of provincial and federal government and private agencies involved in the development and delivery of agricultural education. For example, the University of Alberta offers degree programs in agriculture, and Alberta Agriculture Food and Rural Development operates the Green Certificate program.

There is a proliferation of programs, and duplication and unnecessary competition for resources.

Industry desires the credentialing of courses and programs by colleges.

ii) *Action Plan*

The colleges will identify the agencies which offer the same (or similar) programs and services as they do, with a view to reducing competition, and/or increasing collaboration, ensuring the appropriate credentialing and the recognition of prior learning, so as to better serve both industry and students.

III. Implementation Plan

The broad purpose of this section is to identify the steps that will be taken to implement the action plans described in Sections CI and CII of this report. Specifically, an implementation framework has been developed to guide this process, and is shown in the following pages. Included in this framework are:

- the benefits expected to be realized through implementation, by students, colleges, industry, and the Ministry;
- strategies for implementing specific plans; and
- accountability criteria such as timelines, performance indicators and the identification of responsible officials and/or committees.

The Steering Committee has agreed to fully complete this framework by October 1, 1995. The committee will assess and report on the results of implementation by Fall, 1996 and in subsequent years as required.

OUTLINE OF IMPLEMENTATION PLAN

OUTLINE OF IMPLEMENTATION PLAN

Agribusiness

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
i) The colleges will jointly identify and work with a representative group of agribusiness employers to ascertain appropriate content, quotas and delivery formats for this program as well as competencies and a rationalized curriculum.			
ii) The Farm Business Management Certificate Program is somewhat separate from the Agribusiness programs but the two will be articulated at all colleges.			

Agricultural Mechanics

i) The colleges will work towards consistent nomenclature and certification in this program area.			
ii) The program will continue to be offered at all four colleges, subject to consultation through a Provincial Advisory Committee.			

Agricultural Technology/Production

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
<p>i) The institutional diplomas in agricultural production and agricultural technology will be named by each of the colleges appropriate to program focus; i.e. Agricultural Production or Agricultural Technology. It is intended that a single diploma name will be developed over time.</p>			
<p>ii) A common core of competencies will be in place by September 1, 1996 which ensures articulation of year one of the Agricultural Production/Agricultural Technology programs. Further, it is recognized that each of the institutions will have scope to offer specializations in year two specific to regional needs, in collaboration with the lead-role college. The colleges will undertake a study to determine the degree of commonality between crop and livestock production specialties to enhance transferability and recognition of prior learning.</p>			

Agricultural Technology/Production (continued)

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
<p>iii) Agricultural specialties will be located as follows: Swine - Olds College Sheep - Olds College Dairy - Lakeland College Advisory Committees will assist in determining student numbers, program content, organization and operations. i.e. possible year-round operation is required</p>			
<p>Beef - all colleges will be involved, relying on a provincial advisory committee to assist in determining program content, specializations required, transferability and student numbers to be served.</p>			
<p>Crops - All colleges will be involved, relying on a provincial advisory committee to assist in determining program content, specializations required, transferability and student numbers to be served.</p>			

Animal Health Technology

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
i) In conjunction with NAIT, there will be a review of the size and locations of the current programs.			
ii) A provincial advisory committee will be established and will include representatives from program accreditation agencies.			
iii) All institutions offering this program will improve program articulation and transferability			

Beekeeping

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
i) Fairview College will have the lead responsibility for this program area.			
ii) A Provincial Advisory Committee will be created to advise on such program matters as quotas and curriculum.			
iii) Fairview College will reduce unit costs in this program.			

Equine Studies

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
i) Equine-related diploma programs will be designed to meet the specific needs of the sectors of the Equine industry that are being targeted.			
ii) The colleges with Equine-related diploma programs will work with the Alberta Equine Industry Development Council to form a provincial advisory committee to ensure that program reviews and curricular offerings conform to the evolving needs of targeted sectors of the industry and to assist in forecasting enrolment quotas.			
iii) The colleges with Equine programs will meet avocational interests by delivering non-credit Equine-related training on the basis of full recovery of direct costs.			
iv) All colleges' Equine curricula will evolve as industry evolves and, where common curricular needs are identified, the colleges will cooperate in the development of curriculum and transferability of students based on a set of common competencies to be developed during their first year of studies.			

Equine Studies (continued)

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
v) All colleges shall reduce significantly the unit costs of the Equine program.			
vi) Fairview College will articulate its equine program activities with those of Olds and Lakeland Colleges.			

Farrier

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
i) Olds College will be the lead institution responsible for designing the program based on consultation through a Provincial Advisory Committee.			
ii) The Fairview College program will articulate with the Olds College diploma program.			
iii) The colleges will reduce the unit costs of the Farrier program.			

Horticulture

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
i) Olds College will assume the lead responsibility in this program area and will pursue the resolution of Industry association concerns through a Provincial Advisory Committee, and in consultation with the other colleges.			

Irrigation Technology

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
i) Lethbridge Community College will be designated as the institution responsible for designing and coordinating the delivery of all required technology training for the irrigation industry, in consultation with the industry and the other colleges through a Provincial Advisory Committee.			
ii) The curriculum of the Irrigation Technology program will be reviewed to determine if the first term or more could be included in the first year of the Agricultural Technology/Production program.			

Seed and Grain

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
i) Olds College will be designated as having the responsibility for designing and coordinating the delivery of all required industry training for the seed and grain industry, in consultation with the industry and the other colleges.			
ii) The possibility of the Seed and Grain program becoming an option or major in the Agricultural Technology/Production program will be reviewed with industry and other colleges through a Provincial Advisory Committee.			

Turfgrass

<i>Action Plan</i>	<i>Benefits</i>	<i>Strategy</i>	<i>Accountability Criteria Responsibility/Timeline/Progress Indicators</i>
i) Both Olds and Fairview Colleges will continue to offer distinctive diploma program in this sector. Olds College will continue to offer the Turf Management major in their Horticulture program. Fairview College will continue to offer the Golf Course major in their Turfgrass Management Program.			
ii) A provincial advisory committee will be formed to advise the two institutions on such matters as: <ul style="list-style-type: none"> • capacity of the industry to absorb graduates, and • desired competencies of graduates. 			
iii) A significant degree of commonality in first-year studies will be developed and both colleges will ensure transferability between the two institutions.			
iv) Fairview College will continue to offer a certificate program in Turfgrass Equipment.			

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APPENDICES

APPENDIX I - AGGREGATED 1993-94 ENROLMENTS (HEADCOUNTS)

APPENDIX II - 1993/94 COSTS/FTE

APPENDIX III - PROGRAM AND INDUSTRY INFORMATION

APPENDIX I
AGGREGATED 1993-94 ENROLMENTS
(HEADCOUNTS)

Program Area	Program Length	# Qualified Applicants	1st Year Quota	1st Year Enrolment	2nd Year Quota	2nd Year Enrolment	Number of Graduates ¹
Agricultural Mechanics	6 mos-2 years	202	126	126	72	52	72
Agricultural Technology	1 - 2 years	325	198	163	150	146	97
Animal Health Technology	2 years	242	70	71	70	56	53
Beekeeping	18 weeks	-	20	8	-	-	8
Business	2 years	117	55	61	50	56	53
Equine	20 weeks-2 years	157	58	53	32	36	34
Farrier	16 weeks-1 year	43	24	25	-	-	19
Horticulture	2 years	146	60	32	60	37	24
Irrigation	2 years	(Program temporarily suspended in 1993-94)					
Seed & Grain	2 years	24	20	17	-	1	1 ²
Turfgrass	2 years	109	56	95	56	90	76
Totals		1365	687	651	490	474	437

Source: Data compiled by the colleges in July 1994. Due to differences in timing and program organization, this data may not be identical to that in Appendix 2.

¹ Number of Graduates include graduates from programs of all lengths, so may exceed Second Year Enrolments.

² Program offered every second year commencing in 1991-92; hence, there were no second-year students in 1993-94.

Appendix II
1993/94 Costs/FTE

Program	Fairview			Lakeland			Lethbridge			Olds			Avg Cost/FTE			Program
	Cost \$	FTE's	Cost/FTE \$/FTE	Cost \$	FTE's	Cost/FTE \$/FTE	Cost \$	FTE's	Cost/FTE \$/FTE	Cost \$	FTE's	Cost/FTE \$/FTE	Costs \$	FTE's	Average \$/FTE	
Ag Mech	585,219	35.61	16,432	201,313	8.00	25,164	139,220	24.82	5,609	1,343,910	120.78	11,127	1,684,443	153.6	10,966	Ag Mech
Ag Tech																Ag Tech
Crop Tech	397,390	23.50	16,910	397,390	23.50	16,910		63.00	9,130	1,338,029	115.42	11,593	2,498,409	214.0	12,479	Crop Tech
Herd Health	556,223	41.20	13,501	556,223	41.20	13,501							556,223	41.2		Herd Health
Livestock Tech	505,538	38.40	13,165	505,538	38.40	13,165							505,538	38.4		Livestock Tech
AHT	724,446	57.64	12,569	540,952	36.50	14,821				413,818	25.77	16,058	1,679,216	119.9	14,004	AHT
Beekeeping	182,523	8.66	21,079										182,523	8.7	21,079	Beekeeping
Business				213,649	14.60	14,633				622,856	64.50	9,657	836,505	79.1	10,575	Business
Equine	343,606	2.85	120,564	709,170	38.60	18,372				820,900	45.80	17,924	1,873,676	87.3	21,475	Equine
Farrier	58,999	5.50	10,727							274,610	12.51	21,951	333,609	18.0	18,524	Farrier
Horticulture										1,393,938	119.32	11,682	1,393,938	119.3	11,682	Horticulture
Irrigation																Irrigation
Seed/Grain							228,805	16.40	13,952				228,805	16.4	13,952	Seed/Grain
Turf Equipment	173,936	13.62	12,770										173,936	13.6	(In Ag Mech)	Turf Equipment
Turf Maintenance	36,793	6.86	5,366										36,793	6.9		Turf Maintenance
Turf Management	800,525	99.73	8,027										800,525	99.7	7,856	Turf Management
Totals	\$2,906,047	230.46	12,610	\$3,124,235	200.80	\$15,559	\$714,381	87.82	\$8,134	\$6,436,866	520.50	\$12,367	\$13,181,529	1,039.6	\$12,680	Totals

- NOTES:
1. Any differences between shown and calculated values of Cost/FTE are due to rounding of FTE's values.
 2. The data displayed were generated using a consistent costing methodology developed by the colleges.
 3. These figures include net program operating costs for credit enrollments only; they do not include capital amortization.

APPENDIX III

PROGRAM AND INDUSTRY INFORMATION

AGRIBUSINESS

College Data

Program	Program Objectives	Enrolment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data			
		Student Interest	Quota	Graduates Spring 1993 Spring 1994				Graduates 1993	Number Employed	Percentage	
Olds Agricultural Business											
General	This program is intended to prepare people to become self-employed, or employees of agribusiness or to go on to further studies in Agricultural Business at the university level. Prepares people for a position in the agricultural service sector.	86	30	25	26	Lectures Labs Practical Demonstration	Joint venture facilities Classrooms Computer Labs Local Farms and Business	Sales & Service Financial Services Family Business	26	21	81
Finance	This program is intended to prepare people to become self-employed, or employees of agribusiness or to go on to further studies in Agricultural Business at the university level. Prepares people for a career in agricultural lending and finance.	61	24	12	n/a	Lectures Labs Practical Demonstration	Joint ventures facilities Classrooms Computer Labs Local Farms and Business	Banks Credit Unions Credit Agencies			
Lakeland Major Agri-Business	The primary focus of the Agri-Business major is to prepare students for management positions in businesses that serve primary, secondary and tertiary agriculture.	61	24	12	n/a	Classrooms Labs Case Studies Computer Simulations Field Trips	Crop and Soils labs Computer labs Growth Chambers College farm facility Local farms and business	Sales and Supply Services Financial Institutions Self Employment Local Farms	12	7	60

AGRIBUSINESS

Industry Data

Industry Subset	
Sector	
Contact Person	<p>Wilson Lorie Head-Farm Business Management Branch Alberta Agriculture and Rural Development #201 Provincial Building 5030 - 50 Street Olds, Alberta T4H 1S1 556-4213 FAX: 556-7545</p>
Scope of Industry Sector	<p>This sector is comprised of businesses which handle or provide agricultural products or services. As a result, it is not a clearly defined sector because businesses may be involved with products or services in addition to agricultural ones. Hence, there is a spectrum of agribusinesses ranging from such entities as the family farm and seed plants (which usually are solely agricultural) to others such as accounting firms/banks and pet shops (which usually have both agricultural and non-agricultural products and services).</p>
Future of Industry Sector	<p>This sector is becoming increasingly competitive, with successful enterprises being those that are well-managed, and having sound business plans and operators/employees with skills in production, marketing, finance, and human relations. While large credit/loan firms have preferred to hire people with agricultural backgrounds in the past, this may not be the case in the future, especially at the management level.</p>
Training Needs	<ul style="list-style-type: none"> • Programs must prepare students for the tasks they will actually perform upon graduation; preparation for ownership is not a realistic objective. • Programs should ensure that graduates can successfully integrate a wide range of skills, knowledge, and information. • The various farm Business Management activities now underway are valuable and should be continued.

AGRICULTURAL MECHANICS

College Data

Program	Program Objectives	Enrollment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data	
		Student Interest	Quota	Graduates Spring 1993 Spring 1994				Graduates 1993	Number Employed Percentage
Olds									
Mechanical Technology	This program is intended to prepare individuals for employment in the machinery sector of agribusiness and/or manage and work on a farm or ranch.	144	72	34 41	Lecture Labs Practical Limited use of college farm	Two self-contained buildings Specialized machinery and jobs Farm operation	Ag service sector Dealerships Repair Shops Farm/Ranches	34	29 86
• Pre-Apprentice	This program is intended to enable students to develop practical, hands-on skills, and/or to proceed (with credit) to the full apprenticeship training.								
• Equipment	This program is intended to prepare people who are interested in mechanics, but who do not wish to become journeymen.				Lecture Labs Practical Limited use of college farm	Two self-contained buildings Specialized machinery and labs Farm operation	Own/Manage/Operate a farm or ranch Repair Shops Dealerships		
Lakeland									
Agricultural and Heavy Equipment Technician	This program is intended to provide students with the technical skills required for careers in farm machinery maintenance and repair. Students may also enter the Heavy Equipment Technician or Agricultural Mechanics apprenticeship training.	12	12	9 5	Class Shop (hands-on)	Fully equipped lab College farm machinery Access to related trades instruction	Family Farm (self-employed) Dealerships Contractors	9	n/a n/a

AGRICULTURAL MECHANICS

Industry Data

Contact Person	Rick Atkins Head-Engineering Services ALBERTA AGRICULTURE Lethbridge, Alberta
Scope of Industry Sector	There is no clearly defined industrial sector because farm operations and businesses may be involved with products or services in addition to those related to agricultural mechanics.
Future of Industry Sector	As with all sectors which relate to the application of technology, this sector requires people who possess current knowledge and skills, and particularly have "hands-on" ability, in order to manufacture and repair agricultural machinery and equipment. Maintenance of those capacities is essential. As the use of technology continues to grow in agriculture, new specialties and increased employment opportunities are likely to emerge.
Training Needs	Students must possess both the basic competencies and specialized knowledge, and have opportunities to maintain the currency of both. In-service courses are essential in such areas as electronics, hydraulics, safety, and management.

AGRICULTURE TECHNOLOGY

College Data

Program	Program Objectives	Enrollment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data	
		Student Interest	Quota	Graduates Spring 1993 Spring 1994				Graduates 1993	Number Employed Percentage
Fairview									
1. Livestock Production	This program is intended to provide students with the fundamental training required to deal with conditions and challenges fundamental training required to deal with conditions and challenges of today's agriculture. The program covers the fundamentals of agricultural production, basic business practices, and human relations.	29	30	13	18	Classroom Labs Practicum Field Trips	Self-Employment UFA Grain Companies Elevators Feed Mills Weed Inspectors Ag Fieldmen Fertilizer Dealers Machinery Dealers Chemical Companies	13	13 100
2. Crop Production									
3. General Agriculture									
Lakeland									
1. Livestock	To provide students with a technical understanding of range management, livestock, genetics, nutrition, soils, and forage along with related business skills.	36	20	7	9	Practical Hands on Training Classrooms Cooperative Projects	Self-Employment, Herds People in feedlots, dairy or swine operations	28	20 71
2. Crop Technology	To provide students with fundamental training in crop production, finance, marketing and business operations.	27	20	10	5	Traditional Lecture Labs Student Managed Farms Farm Supply	Elevator Manager, Fertilizer/Chemical Sales, Custom Farming, Seed Cleaning Plant Manager, Agricultural Fieldman, County Weed Inspectors, Lab Technician		
3. Herd Health	To provide students with the basic skills required in the treatment, monitoring, and prevention of animal health problems.	37	20	11	17	Traditional Classrooms and Labs College Farms Facilities and Animals	Herdspeople in Feedlot, Dairy or swine operations, Sales/Customer Service, Advice in the Agr-Services Industry. Technical Areas of Government		

AGRICULTURE TECHNOLOGY

College Data

Program	Program Objectives	Enrolment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data	
		Student Interest	Quota	Graduates Spring 1993 Spring 1994				Graduates 1993	Number Employed Percentage
Lethbridge 1. Animal Science	This program is intended: To effectively train individuals, enabling them to enter and remain competitive in the wider range of career opportunities within the industry of agriculture.	75	48	22 27	Theory Applied Lab Field Trip	Courses shared with other programs Labs, Equipment Animal Husbandry Facility Staff	Self-Employment Farms Animal Husbandry Supply Companies Technologists Ag Fieldmen	22	14 64
2. Plant and Soil Science									
3. General Agriculture	To focus on the specific conditions and requirements that effect agriculture in Southern Alberta. To develop specialized skills and competencies while fostering a fundamental understanding of the agricultural industry as a whole. To provide a practical and coordinated approach to achieve a truly sustainable agriculture industry in which both natural (inherent) resource management and economic management are thoroughly integrated. To expand the ability of graduates to enter career positions and the range of choices; to recognize developing fields and to facilitate continuation of studies in related agricultural programs. To optimize training opportunities and experiences in agriculture with the context of fiscal responsibilities.								

AGRICULTURE TECHNOLOGY

College Data

Program	Program Objectives	Enrolment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data	
		Student Interest	Quota	Graduates Spring 1993 Spring 1994				Graduates 1993	Number Employed Percentage
Olds College	This program is intended: To prepare students for a career in both forage and field crops. To prepare students for both crop and livestock production with an emphasis on management skills. To prepare students for the operations of livestock enterprises (PRODUCTION AND MANAGEMENT).	181	60	35 39	Classroom Laboratories Practical Demonstration		Own/Operate, manage or work on a Farm or Ranch producing field crops or forage crops Herbicide/Fertilizer Sales Equipment Sales Own/Operate/Manage Farm or Ranch Focus on Management	35	26 73
1. Crop Production									
2. Farm and Ranch Production									
3. Livestock Production									
4. Beef Production Management	To prepare students for the operation of beef enterprises (purebred and commercial cow/calf, feedlot, etc.)								
5. General Production	To prepare students to meet specific agricultural production needs. This major has increased flexibility to allow learners to select training to meet the needs of unique agricultural businesses.								
6. Production Management	This program major is intended to round out the Olds College Mechanical Technology Graduate who intends to be a producer and seeks production and management skills to complement mechanical skills.								

Industry Data

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AGRICULTURE TECHNOLOGY

Industry Data

Industry Subset		Livestock				Crops	
Sector	Beef	Sheep	Swine	Dairy	Cereal and Oil Seeds	Special Crops	Forage
Scope of Industry Sector	Beef cattle production is Alberta's largest agriculture sector providing \$2.2 billion in farm cash receipts annually or 44% of total farm cost income. The industry has 2 million breeding beef cows and heifers. About 1.6 million cattle fed each year with total annual beef production of approximately 400,000 tonnes. Meat packing is Alberta's second largest manufacturing industry, employing over 4300 people and paying 125 million annually in wages and salaries. Cattle and beef production contributions over \$9 billion to the Alberta.	There are anywhere from 200,000 to 250,000 sheep and lamb in Alberta and approximately 2000 sheep producers. However, approximately 200 operators produce over 90% of the sheep. Thirty-three Hutterite colonies are extensively into sheep and they produce approximately one-half of the sheep. Sheep and Lamb contribute an estimated \$30-35 million in farm cash receipts. Generally a complementary enterprise to hogs and cattle. Alberta has the largest population of sheep in Canada. The industry is becoming more important to environmental sustainable agriculture.	Hog production contributed \$323M to total farm cash receipts in Alberta in 1993, which was 6.4% of the provincial farm cash income that year. In July, 1993 there was an estimated 4,779 farms reporting pig sales, with those farms having a total of some 1,868,000 pigs (an average of 387 pigs per farm); 554 farms produced 70% of sales. Relative to the rest of Canada, Alberta ranks third in terms of hog numbers. Geographically, the large majority of hog farms are located in Central and Southern Alberta (only about 9% are located north of the latitude of Athabasca).	<ul style="list-style-type: none">• In 1993-94 milk production amounted to 541M litres, with an estimated farm value of \$287M• In the same year, cream production amounted to 93,000 kg, creamery butter production totaled 7.7M kg, and cheddar cheese production 6.3M kg• In 1993, there were a total of 1,358 milk and cream producers in Alberta, with about 98,000 dairy cows for an average herd size of 72 cows.• One person can handle a herd of 40-50 cows; where employees are needed, they are often family members, or if hired, come from Europe.• Entry into the dairy industry, as an owner, requires a relatively large capital outlay.• Students should expect to become employees, rather than owners, as a result of their training.• The dairy industry needs people who are generalists rather than specialists people who are proactive (can work independently), who are learners, and who possess core, practical skills and knowledge.	<ul style="list-style-type: none">• Approximately 19.8M acres under cereal and oil and seed crops• Approximately \$1.2B in farm cash receipts in 1992 from 10.6M tons• Approximately 21,000 grain farms reporting over \$2,500 in sales in 1992• 15.5M tonnes of grain grown in Alberta annually, of which 4.9M tonnes is fed to Alberta livestock.	<ul style="list-style-type: none">• Input to Alberta Economy is approximately \$105M per year• There are some 12 crop kinds from year to year, depending on the district zone, i.e., dry beans, grain corn, sugar beet, sunflower, safflower, mustard, fababeen, lentil, canary seed, and buckwheat.	<ul style="list-style-type: none">• Examples include alfalfa, bromegrass, crested wheat grass, wild ryes, timothy, creeping rescue, and red clover.• Several processing plants in Alberta dehydrate alfalfa and densified hay• 26.6M acres under forage support• 1.6M head of beef cattle• Forage is used in reclamation and conservation.• 9.8M acres in Alberta under tame hay and pasture• 16.8M acres are native range.

AGRICULTURE TECHNOLOGY

Industry Subset	Livestock			Crops		
Sector	Beef	Sheep	Swine	Dairy	Cereal and Oil Seeds	Special Crops Forage
Future of Industry Sector	Annual demand for employees in the beef industry tend to be very seasonal with more people required in spring calving, June roundup and processing and fall weaning periods. Some work is contracted out. i.e. branding	1. Up to 30,000 sheep leave the province to BC to keep down "weeds" so seedlings can grow. This will increase. 2. Some Alberta ranchers have lost 20 to 30% of their ranch brush creating a new potential "Range Rehabilitation" opportunities (that is, vegetation control). 3. Opportunities for more grazing contractors will emerge.	* The number of larger operators is increasing, with a corresponding decline in the number of smaller operators. * There will be overall growth in this industry in the next 5-10 years resulting from greater investment from both domestic and foreign sources; this will lead to increased needs for trained people. * The export market is growing, as the production capabilities of other countries (i.e. Japan) is maximized. * Operations are becoming increasingly more complex in terms of technology and human resource management.	* The number of dairy farms in Alberta has been declining over the past 20 years (from a reported 1,933 in 1976 to 1358 in 1993). * Production has remained fairly steady over the past decade, indicating that while the number of farms has decreased, the overall herd size has been somewhat constant. The number of owners has been decreasing, and the number of employees has increased. * The North American dairy marketplace will change significantly over the next 5-10 years, as operations become larger (but fewer in number), requiring more trained employees.	Services provided by government are becoming more specialized. Government is looking at privatization and cost recovery for it's services. Private sector will need to fill any gap created through reduced government services.	

AGRICULTURE TECHNOLOGY

Industry Data

Industry Subsector	Livestock			Crops	
	Beef	Sheep	Swine	Cereal and Oil Seeds	Special Crops
Training Needs	Technological, management, computers, range management, and other relevant short courses.	Short courses in such areas as: Shearing, Wool Grading, Range Management, Lamb Marketing, Shepherding, and Production Economics.	<ul style="list-style-type: none"> College programs must move beyond technical training (i.e. production) to encompass management, financial, marketing, and human resource skills. There is potential to form cooperative alliances between the colleges and industry; large operations can be effective training sites, reducing the need for college infrastructure and facilities. Probably only one college training center needed in Alberta, using a Center of Specialization model in conjunction with Coop. 	<ul style="list-style-type: none"> Need for training beyond the diploma level. Short-term courses preferable to full-time study. Distance education/delivery More industry involvement in design/development/delivery of programs/courses. Work experience programs are valuable. 	Forage

ANIMAL HEALTH TECHNOLOGY

College Data

Program	Program Objectives	Enrolment Data				Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data		
		Student Interest	Quota	Spring 1993	Spring 1994				Graduates 1993	Number Employed	Percentage
Fairview Animal Health Technology	To provide a broad background in all aspects of animal health services, animal management and diagnostic laboratory procedures.	72	30	24	21	Labs Lecture Clinical Work Practicum	College Farms Specialty Labs Local Vet Clinic Regional Vet Lab Local Farms	Veterinarians Feedlots Pet Stores Production Farms Game Farms Research Labs Meat Inspection Diagnostic Labs Zoo's Sales	24	4	100
Lakeland Animal Health Technology	To prepare people to serve as technical assistants to professionals in veterinary medicine. Graduates obtain and test lab specimens, assist in taking and developing radiographs, handle and care for sick animals in the hospital, assist with surgery and anesthesia, and perform routine office procedures involving the public. Graduates are prepared to work with small and large animals in the clinics, institutions, public and private industry animal facilities.	82	20	14	15	Labs Lecture Clinical Work Practicum	College Farms Specialty Labs Local Vet Clinic	Veterinarians Feedlots Pet Stores Production Farms Zoos Sales	14	8(c)	57
Olds Animal Health Technology	To prepare people to serve as technical assistants to professionals in veterinary medicine. Graduates obtain and test lab specimens, assist in taking and developing radiographs, handle and care for sick animals in the hospital, assist with surgery and anesthesia, and perform routine office procedures involving the public. Graduates are prepared to work with small and large animals in the clinics, institutions, public and private industry animal facilities.	216	20	19	18	Year 1 at SAIT Labs Lectures Clinical Field Trips Practicum	College Farms Specialty Labs Vet Clinics	Veterinarians Feedlots Production Farms Medical and Veterinarian Research Units	19	16(a)	84

ANIMAL HEALTH TECHNOLOGY

Industry Data

Industry Subset	
Sector	
Contact Person	<p>Mrs. Darcie Steffler President ALBERTA ASSOCIATION OF ANIMAL HEALTH TECHNOLOGISTS c/o Stony Plain Veterinary Clinic Box 3075 Stony Plain, Alberta T7Z 1L5 963-2258</p>
Scope of Industry Sector	<p>* Graduates employed by veterinarians (286 clinics in Alberta), SPCA's, feedlots, zoos, government labs, pet stores, kennels, colleges, pharmaceutical companies (sales). * 373 active members of the association, 29 associate members. * members must be registered with the Alberta Veterinary Medicine Association to practice with/under the direction of a veterinarian. * reciprocal credential-recognition agreements with several other provinces; anticipated that all provinces will have these in place. * relatively low wages, but these are expected to increase as the contribution AHT's make becomes more recognized.</p>
Future of Industry Sector	<p>* The number of AHT's hired by veterinarians is increasing. * AHT's are mobile, seeking and getting jobs in other provinces and the U.S. * No specialties have developed as AHT's generally are employed in situations involving a variety of animals. * reasonable balance between graduates and available jobs at this time.</p>
Training Needs	<p>* programs should continue to introduce students to a variety of animals (i.e., not specialize by large or small animals, exotics) * small student-teacher ratio should be maintained. * hands-on-learning experiences should be maintained; theoretical knowledge is also very important. * no need for quota changes at this time, but increases in future may be desirable (student-teacher ratios should be maintained).</p>

BEEKEEPING

College Data

Program	Program Objectives	Enrolment Data				Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data		
		Student Interest	Quota	Graduates					Graduates 1993	Number Employed	Percentage
Fairview				Spring 1993	Spring 1994						
Beekeeper Technician	This program is intended to train people wishing to make their living as beekeepers.	14	20	7(a)	8(b)	Lecture Labs Field Trips	500 Bee Colonies Specialized Facility Local/Regional Commercial Operations	Self-Employment	7	7	100
				(a) plus 4 international students (b) plus 8 international students							

BEEKEEPING

Industry Data	
Industry Subset	
Sector	
Contact Person	<p>Mr. Ken Turkey Provincial Apiculturist ALBERTA AGRICULTURE, FOOD AND RURAL DEVELOPMENT RR# 6, 17507-Fort Road Edmonton, Alberta T5B 4K3 422-1789</p> <p>Mr. Joe Smith President ALBERTA BEEKEEPERS' ASSOCIATION PO Box 486 Manning, Alberta T0H 2M0 836-3411</p>
Scope of Industry Sector	<ul style="list-style-type: none"> • The Bee Act requires anyone having bees or beekeeping equipment to register with the Province. • Currently 738 registered beekeepers operating 165,587 hives; 82 operators have 600 more hives (i.e. commercially viable operations), totaling 130,140 hives. • Beekeeping contributed about \$15M to the Alberta agriculture economy in 1993. • Products include honey, wax, pollen, queen bees, bee venom, and pollination services. Potential may also be available for Royal Jelly and Propolis. • 60% of the commercial operations are in Northwestern Alberta (Agriculture Regions #4 and 5); 22% are in Southern Alberta (Region 1) and 14% are in East Central Alberta (Region 3). • The main work is seasonal, with part-time help being required over the summer months (about 1 hired hand per 450 hives, suggesting about 250-300 part-time people).
Future of Industry Sector	<ul style="list-style-type: none"> • The number of beekeepers has been relatively steady over the past five years. • Even so, the size of apiaries is increasing steadily and production levels are being maintained. • The average age of beekeepers is increasing, with many now reaching normal retirement age. The source of their successors is not clear. • An emerging "product" is pollination service, where bees are used to pollinate crops, but there is no resulting honey production. • The export trade may grow over the next decade as bees in other countries become contaminated.
Training Needs	<ul style="list-style-type: none"> • For potential operators, training should continue to include courses/skills that go beyond the technical to include such things as business/financial management. • There continues to be a need for in-service courses for practicing beekeepers. • Research needs should be met through the universities.

EQUINE STUDIES

College Data

Program	Program Objectives	Enrolment Data				Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data		
		Student Interest	Quota	Graduates					Graduates 1993	Number Employed	Percentage
				Spring 1993	Spring 1994						
Fairview											
1. Equine Studies Certificate	This program is intended to give students the many skills required to work successfully in a wide variety of areas of the horse industry.	28	12	4	42	Classroom Labs Work Experience	Land: Available in Costing Project Facilities: Riding Pavilion Horse Barn Livestock: Available in Costing Project Staff: Coordinator (0.1 FTE) Term Faculty Members (0.6 FTE) Part-Time Faculty Members (0.4 FTE)	Assistant Horse Trainer Feed Mills UFA and Co-ops Sales Community Pastures Grazing Leases Feed Lots Farms and Ranches	29	14	48

EQUINE STUDIES

College Data

Program	Program Objectives	Enrolment Data				Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data		
		Student Interest	Quota	Graduates					Graduates 1993	Number Employed	Percentage
				Spring 1993	Spring 1994						
Lakeland 1. Western Horsemanship Diploma	This program is intended to provide current and intense vocational training designed to prepare students with the skills necessary to be employed in the horse industry and/or establish a small business.	90	26	10	12	Hands on Skill Development	Land: Pasture(67.4 ha) Facilities: Riding Arena (2790 sq.m.,\$1.1 M) A.I. Center (446 sq.m., \$0.23M) Horse Barn (507 sq.m., \$0.007M) Hay Sheds (642 sq.m., \$0.040M) Livestock: Approx. 57 horses (\$166,000) Staff: 2 Faculty Members Part-Time Equine Center Operator	Stable/Farm/Ranch/Rodeo Managers Grooms Riding Instructors, Coaches Appraisers, Buyers Sales/Manufacturing Horse Trainers Small Business Operators Farrier			

EQUINE STUDIES

College Data

Program	Program Objectives	Enrolment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data		
		Student Interest	Quota	Graduates Spring 1993 Spring 1994				Graduates 1993	Number Employed	Percentage
Olds										
1. Production Management Diploma	This program is intended to prepare students to work with horses in a management role.	174	20	15	18	Land: Grazing (84.8 ha, \$0.212M) Facilities: Barn (415sq m., \$0.064M) Foaling Barn (715sq m., \$0.015M) Horse Shed and Pen (248sq m., \$0.045M) Arena (3131sq m., \$0.8M) Equine Shelters (329sq m., \$0.015M) Livestock: 27 horses (0.149M) Staff: 3 Faculty Members (1 Coordinator/Instructor, 2 Instructors) 1 Equine Technician	Own/Operate, Manage or Work on a farm. Employment in Agriculture equipment sales.			
2. English Trainer Diploma	This program is intended to prepare students to work as a trainer's assistant for Western events such as cutting, reining, working cowhorse, or western pleasure.									
3. Western Trainer Diploma	This program is intended to prepare students as a trainer's assistant for English events such as jumping, dressage, hunter over fences, hunters under saddle and eventing.									

EQUINE STUDIES

Industry Subsector	Agricultural			Sports Recreational					
	Breeders	PMU Producers	Meat Producers	Riding Instruction	Boarding Stables	Trainers/Racing Stables	Trainers/Training Stables	Tourism	Show Organizers
Contact Person	Richard Soyland President ALBERTA EQUINE INDUSTRY DEVELOPMENT COUNCIL P.O. Box 96 Edmonton, Alberta T5J 2G9	Les Burwash Supervisor-Horse Section ALBERTA AGRICULTURE, FOOD AND RURAL DEVELOPMENT Bag Service #1 Airdrie, Alberta T4B 2C1 948-8532				Jim Thornton President ALBERTA EQUESTRIAN FEDERATION 713-52521 Range Road 222 Airdrossan, Alberta T0B 0E0 427-3222 EXT: 257			
Scope of Industry Sector	7,000 farming operations (Breeders) 25,000 horses changing hands 7,000 supported families 35,000 employee* supported \$14 M Regular horses \$12 M Grades \$5 M Stud Fees	66 farming operations (PMU) 10,000 horses 66 Family Owners 200 Workers	100 farming operations (Meat Producers) 16,000 horses \$8 M local sales \$25 M export sales	800 farming operations 10,000 students \$5 M sales	400 + farming operations 12,000 horses 2,000 people supported \$28.8 M sales	350 farming operations 3,000 horses 6,000 people supported \$200 M + \$1.50M Business sales	200 farming operations 3,000 horses 300 people supported \$9 M sales	60 farming operations 3,500 horses 6,500 supported people \$50-\$70 M sales	500 + farming operations 15,000 horses Few people employed, mostly volunteers. Each activity requires a min. of 5-10 people. \$75 M

EQUINE STUDIES

Industry Data

Industry Subset	Agricultural					Sports Recreational			
	Breeders	PMU Producers	Meat Producers	Riding Instruction	Boarding Stables	Trainers/Racing Stables	Trainers/Training Stables	Tourism	Show Organizers
Future of Industry Sector	Expect to have an increase in demand to continue at least 5 more years. There is also a shortage of the right kind of horses in the market place.	Industry is expected to remain consistent for the next three years.	Expect the slaughter of horses to remain relatively stable. All horse meat is exported.	Many riding instructors are not paid but teach at Pony Clubs and 4H. Paid riding instruction and gratus instruction will increase 5% a year..	Increase demand for services, especially near Urban Centres.	This sector is expected to remain constant for the next 3-5 years.	Increase in demand for trainers at 10-15% a year for the next 5 years.	With the increase in tourism, the low Canadian dollar, an increase of 10% a year for 5 years in anticipated.	Participation in horse competitions is expected to grow 10-15% each year for the next five years.
Training Needs	There is an increasing need for knowledge of selection of horses, basic care, technological knowledge in artificial insemination, farm management, and computers. Will require more diploma and university educated people. There is also a need for more extension courses to update producers.	Required workers will need to have basic skills taught in horse care and handling. This can be done through diploma courses and/or extension courses geared to the industry.	There is a need for extension and/or short courses to update producers in advances in nutrition and health care.	Increase in requirements for certification of instructors, which require concentrate programs at a college for 3-6 months/year.	Stables are going to require staff with a broader knowledge of horse care. Need for more education to train managers and owners. Increased business training including computers, and people handling skills.	Main educational needs will be in the area of continuing education/short courses. There is a need for broader education in the industry, but the industry may not be ready for it.	Increase in demand for students to apprentice under trainers.	Will require training of trail hands. People will need to be educated in basic horse handling, packing, and communication skills with people. (There is a guide school at Grande Cache).	Requirement for short courses and extension courses to educate activity organizers and volunteer groups to conduct successful competitions.

FARRIER

College Data

Program	Program Objectives	Enrolment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data	
		Student Interest	Quota	Graduates Spring 1993 Spring 1994				Graduates 1993	Number Employed
Fairview Farrier Studies Certificate)	To teach Farriery and to provide necessary training for qualification as a professional farrier.	21	10	7 n/a	Lecture Labs	Farrier Barn	Self-employment as Farriers Feedlots Farms and Ranches	18	18
Olds Advanced Farrier Science Certificate	To provide the graduates with practical skills of Farrier.	50	14	11 n/a	Classroom Field Trips Practical: College Farrier Lab College Equine Enterprise Industry Horse Three month practical experience	Farrier Lab Farm Operation	Self-Employed as Farriers Equine and Veterinary support		100

FARRIER

Industry Data

Farrier and Other Related						
Industry Subsector	Farriers	Tack Shops	Feed Shops	Vets	Equipment Dealers	Magazine Writers
Contact Person	Dean Sinclair President WESTERN CANADIAN FARRIERS ASSOCIATION S-10, C-8, R.R.#3, Todd Road Kelowna, British Columbia V1Y 7R2 (604) 764-4794					
Scope of Industry Sector	Comprised of self-employed farriers. Approximately 400 in Western Canada. Annual turnover rate of about 20% in recent years due to aging and/or injuries. Annual income per farrier ranges from \$25,000 to \$60,000. Work subject to fluctuations in the larger economy - very busy during good economic times as horse owners engage farriers; not busy during slow economic times as people reduce their discretionary spending, and many people laid-off from jobs pick up income as part-time, casual farriers.					
Future of Industry Sector	Increase in number of farriers to around 425 in Western Canada. Annual turnover rate could increase to 40%.					
Training Needs	This contact person, a graduate of the Olds College program, feels that there is good opportunity for input into college program activity. If there is an emerging need. It is for more continuing education/short courses targeted at the practicing farrier. Essential that the curriculum include business and communication training, as well as the basic training in horseshoeing and horsemanship.					

HORTICULTURE/TURFGRASS

College Data		Program Objectives		Enrolment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data	
Program		Student Interest	Quota	Graduates		Graduates 1993				Number Employed	Percentage
Olds											
1. Turf Grass Management:	This program major is intended to prepare graduates with skills for the management of golf courses, athletic fields, and recreational facilities.	240	0	19	20	Class/Theory/Labs Work Experience Regional Field Trips College Grounds Field Trips Community Field Trips Practical Projects	1. The Prairie Turfgrass Research Centre (P.T.R.C.) is housed at Olds College. Olds College has 36 hectares of grounds as living laboratory for horticulture students. 2. The Olds College Land Sciences Centre Complex provides necessary classroom and laboratory facilities. 3. Olds College has 3000 sq. meters of Greenhouse Complex.	Golf Course Superintendent/ Assistant Superintendent, Athletic field maintenance, Golf Course Maintenance, Lawn Bowling Facilities Maintenance, Parks and Grounds Maintenance, Wholesale/Retail Sales, Landscape Contracting	44	40	91
2. Landscape Management:	This program major is intended to prepare graduates with skills in Landscape design and contracting, herbaceous and woody plant materials, plant protection, horticulture equipment, business and personal management. Optional courses are available in Nursery Management and Parks and Landscape Management.			12	12	Class/Theory/Labs Work Experience Regional Field Trips College Field Trips Community Field Trips Practical Projects	1. Olds College has a dynamic and mature Arboretum and grounds which comprises over 36 functions of living laboratory for landscape management students. 2. Olds College has state-of-the-art computer facilities (CADD and GIS computer labs) as well as modern drafting labs, construction labs and equipment bays for practical training. 3. Olds College Greenhouse Complex provides necessary growing space for the study of living plants during the winter months.	Parks Management/Maintenance, Landscape Design Maintenance, Landscape Construction (Hard and Soft), Irrigation Systems, Arboriculture and Urban Forestry, Horticulture Material Suppliers, Garden Design/Maintenance			

HORTICULTURE/TURFGRASS

College Data

Program	Program Objectives	Enrolment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data		
		Student Interest	Quota	Graduates Spring 1993 Spring 1994				Graduates 1993	Number Employed	Percentage
Olds										
3. Production Management:	This program major is intended to prepare graduates for the Production, Management and Marketing of the Horticulture crops.			6	4	<ol style="list-style-type: none"> Olds College has a 3000 sq meter Greenhouse complex including seven production ranges and six new research and demonstration compartments. Olds College provides demonstration plots in vegetables, fruits, fresh and dried flower production (2 hectares) and a grounds nursery (1.5 hectares). Olds College provides a full range of expertise in plants, soils, pesticides, entomology, pathology, greenhouse propagation, nursery and container production, weeds management, and irrigation technology. 	<p>Fruit/Vegetable Growing/Advising</p> <p>Field Production Management</p> <p>Wholesale/Retail Sales</p> <p>Product Marketing</p> <p>Nursery Propagation/Production</p> <p>Weed Inspection/Pesticide Application</p> <p>Irrigation Systems</p> <p>Sod Growing/Tree Planting</p>			
4. Greenhouse Management:	This program major is intended to give graduates the necessary skill set in production techniques, construction principles, maintenance and management for the operation of a commercial greenhouse.			7	8	<ol style="list-style-type: none"> A Land Science Center was open for instruction, including a new 700 sq meter glass greenhouse. In January 1994, an additional 400 sq. meters of greenhouse range was constructed. 	<p>Commercial Growing</p> <p>Greenhouse Maintenance</p> <p>Product Marketing</p> <p>General Greenhouse Management</p> <p>Greenhouse Owner/Operator</p> <p>Wholesale/Retail Sales</p> <p>Garden Centres</p> <p>Interior Landscapes</p>			

HORTICULTURE/TURFGRASS

College Data

Program	Program Objectives	Enrolment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data		
		Student Interest	Quota	Graduates Spring 1993 Spring 1994				Graduates 1993	Number Employed	Percentage
Fairview										
1. Turf Grass Management: *Golf Course Major *Parks Major	This program is intended to train specialists to maintain and manage turf grass and related park areas and facilities, and assist in the design and construction of landscape projects.	125* 101** * in 1991 ** in 1992	28* 14**	18 6 34 8	Classroom Labs Work-experience Field trips	1. 3-hole golf-courses on campus 2. Turfgrass Irrigation 3. Greenhouse Complex 4. Construction Training Lab 5. Grounds Lab 6. Ornamental Grass Plots 7. Woody Plant Test Nursery	Golf Courses Parks Seed Industry Institutional Grounds Turf Equipment Industry Fertilizer Industry Seed Industry Teaching	24	24	100
2. Turfgrass Equipment: *Technician	This program is intended to enable students to acquire the skills to service and repair the specialized machinery found in the turfgrass industry.	13* *1993 figures	14*	10* 14*	Lecture Labs Practical work experience	1. Dedicated Facility 2. Related trades training 3. New Equipment on Loan 4. External Industry	Golf Courses Turf Equipment sales/service Golf Cart Servicing Municipal Parks Repair Businesses	68	64	94

HORTICULTURE

Represented By: Congress of Alberta Horticulture Industries
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Industry Data

Industry Subset	Edible Horticulture					Ornamentals Horticulture			Golf Courses
	Potatoes	Fresh Vegetables	Fruit	Greenhouse	Turf Producers	Nursery Growers	Landscape Production Contractors Ground Maintenance Contractors	Garden Centres	
Contact Person	Al Stewart Manager POTATO GROWERS OF ALBERTA 230, 206-27th Ave NE Calgary, Alberta T2E 7A6 791-2430 FAX: 291-2641	Neil S.C. Reid Executive Secretary ALBERTA FRESH VEGETABLE MARKETING BOARD 220 E-12 A Street N Lethbridge, Alberta T1H 2J1 327-0447 FAX: 327-0766	Pat Monner Secretary FRUIT GROWERS SOCIETY OF ALBERTA Box 668 Calmar, Alberta T0C 0V0 987-5384	Bob Stewart President ALBERTA GREENHOUSE GROWERS ASSOC. Sun Tropical 237 Main St Balzac, Alberta T0M 0E0 226-0220	Wayne Purschke Chairman-Sod Growers-LANTA BIG LAKE SOD FARMS LTD. Box 330 Millet, Alberta T0C 1Z0 429-1372 FAX: 352-8314	Dwayne Beck Chairman-Nursery Growers-LANTA PARKLAND NURSERIES RR#2 Red Deer, Alberta T4N 5E2 346-5653 FAX: 346-4443	Peter Lock Chairman-Landscape Contractors-LANTA ALTA GROUND SERVICES LTD. 21111 108 Avenue Edmonton, Alberta T5S 1X3 447-4547 FAX: 455-2305	Anita Heuver Chairperson-Garden Centres-LANTA EAGLE LAKE NURSERIES LTD. Box 2340 Strathmore, Alberta T1P 1K3 934-3622 FAX: 934-3626	Doug Cameron ALBERTA ECONOMIC DEVELOPMENT AND TOURISM 9th floor Sterling Place 9940-106 Street Edmonton, Alberta T5K 2P6 FAX: 427-0778
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HORTICULTURE/TURFGRASS

Industry Data

Industry Subset	Edible Horticulture				Ornamentals Horticulture				Golf Courses	
Sector	Potatoes	Fresh Vegetables	Fruit	Greenhouse	Turf Producers	Nursery Growers	Landscape Production Contractors	Garden Centres		
Scope of Industry Sector	Statistics Canada estimated that 29,000 acres of potatoes with estimated farm cash receipts as high as \$7.5 million dollars for 1993. Statistics Canada also reported 362 producers in 1991. Manpower: 600 Full Time; 2,900 Part Time	The market analysis and statistics board of Agriculture, Food and Rural Development reports annual acreages, production and estimated values for vegetable crops including wholesale, market garden and processed vegetables as follows for 1993: Seeded Acres: 12,255 Producers: 240 Harvested Acres: 11,416 Acres: 6,644 Total Production: 88,345,000 lbs Sales: \$17,318,435 Total Values: \$18,058,000 Equip Invest: \$15,993,200 Replacement Value: \$28.5 Million Part Time(Seasonal): 1,580 Full Time: 220	The 1993 Statistics Canada Fruit and Vegetable Survey estimated that there were 1,205 acres of fruit under cultivation, and 870 acres harvested in Alberta. This included 140 acres of raspberries, 380 acres of strawberries, and 630 acres of saskatoons. Farm cash receipts for the berries estimated at \$3.2 million. Statistics Canada(1991) estimates 246 fruit producers in Alberta. At least half of the gross value of the fruit production in Alberta is marketed through U-pick operations, while approximately one-third is sold to producers and the remainder is marketed at farm-gate or farmer's market. Estimated Equipment investment is \$2,781,600.	The 1994 "Greenhouse Industry Survey" by Statistics Canada reports greenhouse space in use on June 1st as well as for the previous twelve months 346 operators were reported to have 7,488,626 sq. ft. of greenhouse space. About 21% were reported under glass and 77% under plastic. Greenhouses operate on average of nine months per year. Total sales information provided equaled \$51,486,220 if tree seedlings are incorporated there is an additional \$7 M in revenues that could be added to this sector. The Statistics Canada Survey 1994 reported 2,603 full and part time employees in the Alberta Greenhouse Industry. Also, the survey reported a total investment for Alberta Greenhouses at \$114,101,052.	Sod Farms 46 Total Sales \$11,000,000 Assets \$17,405,500 Inventory \$6,955,000 Manpower 80 FTE (46 FT & 58 PT)	Bonified Ornamental Nursery Growers 45 Total Sales \$13,192,250 Assets \$26,610,000 Inventory \$22,999,000 Manpower 322 FTE (126 FT & 427 PT) Average Size 43 Acres in field operations Containers 2 Acres	Landscape Construction & Maintenance Businesses 122 Total Sales (122/458) \$47,733,000 Assets: Equipment \$19,622,000 Assets: Other \$8,967,500 Manpower 1,051 FTE (435 FT & 1,231 PT) There are approximately an additional 1,000 seasonal small operators that have a significant impact on the industry.	Garden Centres 49 Total Sales \$24,200,000 Assets \$17,240,000 Inventory \$13,700,000 Manpower 556 FTE (267 FT & 867 PT)	Alberta currently has 288 golf facilities (215 public, 53 semi-private, 20 private) 156 of the 215 public courses are nine holes Employment: Private courses (18 holes) - 4 full time employees/course Semi-private (some 18 holes) average 2 full time employees per course. \$ Estimate: Using US Formula (for Alberta) \$54,000,000 in wages a year \$132,000,000 in expenditures Total Estimated Full Time Employees: 500	

HORTICULTURE/TURFGRASS

Industry Data

Industry Subset	Edible Horticulture			Ornamentals Horticulture			Golf Courses		
	Potatoes	Fresh Vegetables	Fruit	Greenhouse	Turf Producers	Nursery Growers		Landscape Production Contractors Ground Maintenance Contractors	Garden Centres
Future of Industry Sector	The Alberta potato industry is built on the sale of seed potatoes in addition to the retail sale of table potatoes. These are sold in the US and Western Canada. Alberta ranks second amongst the provinces exporting seed to the US. Emerging seed potato production in greenhouse facilities is becoming a growth opportunity as is the development of more value-added processing/packaging.	A small percentage of vegetable growers plan to increase or expand into value-added processing within the next five years. Opportunities exist to develop export markets for fresh vegetables and to pursue niche markets for specialty products.	Very little fruit production is marketed through retail chains which could present a potential market channel for Alberta fresh fruit. The development of more value-added processing/packaging opportunities exist.	It appears that the greenhouse space has increased in size by approximately 30% in the last three years and it is projected that the vegetable/bedding plant sector will increase by 61% in production over 1993 by 1998 and tree seedlings by 52% while flowers will remain somewhat the same.	Some 46% of the owners indicated that they expect to expand their businesses in the next one to five years. The remainder expect to expand in the next five to ten years.	There is an average of 50.5 acres per nursery that is presently not in production. This would allow a considerable increase in production without the addition to the existing land base of the industry.	Expansion/growth of the sector is anticipated by over 50% of the companies in the next ten years. There is an apparent shortage of skilled labour and the seasonal nature of the jobs and the high percentage of part time labour appears to contribute to some of this shortage.	Approximately 85% of the garden centres plan to expand their businesses over the next ten years. Skilled Labour is very important to this sector.	Development has exceeded demand in virtually every region but the mountains. In excess of 37 new facilities and 23 expansions could be completed over the next one to four years across the province. Areas of greatest growth are South Central Alberta and the mountain areas.

HORTICULTURE/TURFGRASS

Industry Data

Industry Subset	Edible Horticulture					Ornamentals Horticulture			Golf Courses
	Potatoes	Fresh Vegetables	Fruit	Greenhouse	Turf Producers	Nursery Growers	Landscaping Contractors Ground Maintenance Contractors	Garden Centres	
Training Needs	<p>Respondents to a survey suggested the following needs to happen in order to accelerate growth and address opportunities:</p> <ul style="list-style-type: none"> • Provide technology transfer through field trips, farm visits, conferences. • Develop prairie land hybrids. • Provide Horticulture Specialists to give advice. 	<p>In order to enhance or accelerate the opportunities for growth identified, it has been suggested that the promotion of technology transfer through field trips, meetings, conferences, workshops, and on farm visits occur and that Horticulture specialists be provided to give advice to the industry.</p>	<p>It has been suggested that access to training programs including courses in marketing is recommended to address issues related to expansion.</p>	<p>Two year College graduates are difficult to hire for entry level positions because their salary expectations are too high and they are too highly trained. Availability of students when industry needs them. Consider co-op approach or a certificate program.</p>	<p>About half of the industry responding to the CAHI survey, felt that Olds College was providing adequate education in Turf Management. A few felt that Fairview College did as well, perhaps due to the fact that Fairview College concentrates on golf courses and Parks Turf Management rather than Turf Production.</p>	<p>A large percentage of this sector businesses are not satisfied with the delivery of horticulture education in the province and that Olds College and the apprenticeship program were not providing adequate training for the sector. Training, Human Resource practices and Marketing and Sales programs are required to assist in sector expansion.</p>	<p>A labour shortage may be addressed by the delivery of short courses offered during the "off season" for potential part time employees. Much employee training takes place while on the job and given by trained individuals in the industry. The Industry feels that the Landscape Gardeners Apprenticeship program is of benefit to both of them.</p>	<p>Many representatives from this sector did not feel that Olds College was providing adequate training and some did not know that any training existed. The report "Horticulture and Industry Organizing for the Future" states that "The greatest need identified by the industry in Management Training was in the human resources area." Basic Training in the industry should be a requirement before "setting up shop".</p>	<p>An apparent program of short courses in such areas as pesticides and fertilizers, especially for small operators, is urgently required</p>

IRRIGATION

College Data

Program	Program Objectives	Enrolment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data		
		Student Interest	Quota	Graduates Spring 1993 Spring 1994				Graduates 1993	Number Employed	Percentage
Lethbridge Irrigation Technology	To effectively give individuals specialized training to prepare them for various careers in the irrigation and drainage industry. Focus on specific conditions and requirements that affect irrigated agriculture and the turf and landscape industry in Western Canada. Provide a coordinated approach to training in order to gain an understanding of technological, economic and soil and water resource management and economic issues.				Lecture Applied Labs Problem Solving Field Trips	Shared Courses Shared Facilities Government facilities/ personnel Private Industry	Governments Irrigation Districts Equipment Dealers			

IRRIGATION

Industry Data

Contact Person	<p>S.C. Stan Klassen Executive Director ALBERTA IRRIGATION: Projects Association 1210-36th Street N Box 278 Lethbridge, Alberta T1J 3Y7 328-3063 FAX: 327-1043</p>
Scope of Industry Sector	<ul style="list-style-type: none"> * Alberta Irrigation represents the interests of 13 irrigation districts * Irrigation services 1.4M acres of land in Southern Alberta. This represents 4% of Alberta's cultivated land base. It directly generates 16% of the province's Agricultural Production. * About 50 communities rely on irrigation for potable water. * Without irrigation about 1M feeder cattle would move to the U.S. each year. This would equal a direct loss of \$350M and an indirect loss of \$1.4B. * Irrigation supports 3,200 jobs in the Agricultural processing sector and 680 in the manufacturing of agriculture and miscellaneous equipment.
Future of Industry Sector	<p>Areas that need to be addressed for future improvement include:</p> <ul style="list-style-type: none"> * The need to integrate water resource management with improvements in the management of our natural resources, land, fisheries, wildlife recreation, and Agriculture. * Continued rehabilitation of the irrigation network to increase handling and management efficiencies and promote conservation initiatives.
Training Needs	<p>College must be prepared to accommodate technological changes and advancement in the industry by providing relevant, up to date training for upgrading and retraining the work force. Co-op approach not necessarily feasible in irrigation because of the nature of water requirements.</p>

SEED AND GRAIN

College Data

Program	Program Objectives	Enrolment Data			Instructional Approach	Related Resources	Primary Sources of Employers	Employment Data	
		Student Interest	Quota	Graduates Spring 1993 Spring 1994				Graduates 1993	Number Employed
Olds Seed and Grain Technology	This program is intended to provide active training in specialized seed and grain technology within a broad base of agricultural and work-place skills. The program strives to produce graduates with a high level of theoretical knowledge, technical competencies, human relation skills, and communication/problem solving abilities. The overall objective is to enable graduates to pursue careers in either the seed or grain sectors of the industry.	20	20	17 0* * There was no entering cohort in Fall, 1992.	Lecture Labs Work Experience Field Trips Practical Projects Field Labs Specialized Industry Courses	Dedicated Classroom Processing Facility Computer Networks Farm Lab	Seed cleaning plants Sales Seed/Grain/Crop Inspection Seed farms Elevators Research/Analysis	17	7
									100

SEED AND GRAIN

Industry Data

Contact Person	Bill Witbeck Supervisor-Seed Technology ASSOCIATION OF ALBERTA CO-OP SEED CLEANING PLANT'S LTD. Bag Service 47 Lacombe, Alberta T0C 1S0 782-4641	Al Plante Manager-Education and Development Helmuth Schroeder ALBERTA POOL Box 2706 505-2nd Street SW Calgary, Alberta T2P 2P5 290-4793
Scope of Industry Sector	Seed Cleaning Plants: <ul style="list-style-type: none"> • There are approximately 220 authorized cleaning establishments in Alberta. • Volume of seed grain handled in 1993/1994 was approximately 50M bushels which included commercial, pedigree, and dockage removal requests. • The average charge was 30 cents/bushel or \$65/hour. • Many seed growers have their own small plants and do some custom work. • Alberta Pool has 4 major seed cleaning plants. • Alberta Pool has approximately 265 elevators and 500 elevator employees. 	
Future of Industry Sector	There will be a decrease in the number of elevators. That is, Alberta Pool will be downsizing by another 30 elevators in the next year due to changes in transportation, handling, capability and technology changes.	
Training Needs	Continuing education opportunities must be made available to employees in this sector to upgrade their skills and prepare them for the changing industry.	

